

## **REMARKS/ARGUMENTS**

Applicants appreciate the Examiner granting a telephone interview with applicants' attorneys on March 11, 2005. Applicants further appreciate the Examiner's continued thorough search and examination of the present patent application.

Claims 6, and 14-16 stand allowed.

Claims 1-4, 6, 14 and 20 have been amended to more clearly define applicants' invention. Applicants respectfully submit that the changes to these claims make explicit that which applicants believed to be already implicit and, accordingly, are not made for statutory purposes related to patentability.

Claims 1 and 3 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. More particularly, the Examiner states the specification does not clearly support "causing the transmitted impact signal to define" first and second portions of an impact area. In accordance with the Examiner's suggestion, applicants have amended claims 1 and 3 to replace the term "define" with the term "cover." Reconsideration is respectfully requested.

Applicants note with appreciation the Examiner's indication that claims 2, 4-5 and 7 stand objected to, but would be allowed if rewritten to overcome objections the under 35 U.S.C., §112, first paragraph (discussed above). Accordingly, claims 2 and 4 have been rewritten to overcome the Examiner's rejection(s) under 35 U.S.C. §112, first paragraph.

Claims 1, 3, 10-13 and 17-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sampson et al. ("Sampson," U.S. Patent No. 6,579,097) in view of Doerfel et al. ("Doerfel," U.S. Patent No. 4,682,953). Applicants respectfully traverse this rejection.

Applicants' claim 1, as amended, defines a method for simulating the effect of an exploding projectile and a "simulated impact area that would be affected by the exploding projectile[.]" The method comprises "emitting a weapon signal" that defines "a first portion of the simulated impact area less than the entire simulated impact area," "detecting the weapon signal by a sensor" that is located near a target area" and "transmitting an impact signal when the weapon signal is sensed by the sensor and causing the transmitted impact signal to define the first portion of the simulated impact area and a second portion of the impact area which is at least partially outward of the first portion when the weapon signal is sensed by the sensor[.]"

Sampson, in contrast, is directed to a stationary area effects weapons simulator 36 that is activated by activator 44 (see column 5, lines 41-46). Activator 44 may be a “conventional [radio frequency] receiver such as a pager,” and/or it may be a “manual device such as a toggle switch or a trip wire activated electro-mechanical switch.” Once activated, the simulator 36 transmits infrared emissions (via infrared LEDs 40) that represent respective kill zone sectors (column 4, lines 46-56). Soldiers are equipped with optical infrared detectors 32 that detect the infrared radiation (from LEDs 40) (column lines, 12-17).

The features defined in applicants’ claim 1 are not taught or suggested by Sampson and Doerfel, either alone or in combination. Unlike applicants’ claim 1 step of “emitting a weapon signal from a weapon” wherein the weapon signal defines a first portion of the simulated impact area, Sampson teaches an activation command signal that is sent by an instructor to the simulator 36. The command signal taught by Sampson is effectively an on/off switch, and does not define a first portion of a simulated impact area that is less than the entire simulated impact area. Also, Sampson’s area effects weapons simulator 36 does not transmit an impact signal that covers the first portion of the simulated impact area and a second portion which is at least partially outward of the first portion, as no portions of a simulated impact area are taught or suggested by Sampson. Moreover, Sampson’s area effects weapons simulator 36 is not adapted for sensing a weapon signal from a weapon, since, as noted by the Examiner, Sampson’s command signal is not transmitted from a weapon.

The radio frequency command signal sent by an instructor to the activator 44 is simply a signal for activation, which has the same effect like the switch being pressed. The RF command signal, therefore, does not define either a simulated impact area or any portion of it. Consequently, Sampson also fails to disclose transmitting an impact signal that covers the first portion of the simulated impact area and a second portion of the simulated impact area which is at least partially outward of the first portion. In addition, the sensor 44 disclosed in Sampson is not adapted for sensing the weapon signal from the weapon, as there is no weapon.

Claim 3 includes functionally similar limitations not taught or suggested by Sampson.

As the Examiner notes that Sampson does not “explicitly disclose that the weapon signal is emitted from a weapon,” the Examiner cites to Doerfel for disclosing “emitting a weapon signal from a weapon 12 toward a target area 14.” The Examiner asserts that it would have been

obvious to modify the “transmitted weapon signal described in Sampson, by transmitting the signal from a weapon[.]” Applicants respectfully disagree.

Doerfel teaches the use of a master station 4, located within a wheeled vehicle 16 and located near the firing location of a weapon 12, that transmits signals to remote actuators 6 (see column 4, line 59 - column 5, line 7). An operator within Doerfel’s vehicle 16 responds to firing information computed such as by a soldier 24 giving firing commands to the weapon 12. Thus, unlike applicant’s claim 1 and according to Doerfel, the weapon 12 does not emit any weapon signal.

Moreover, applicants respectfully submit that Doerfel teaches use of a computing mechanism 38, such as an IBM compatible PC, for operation (see Fig. 4, and column 9, lines 45-68). Applicants respectfully submit that Doerfel’s personal computer is a device separate from the weapon, and, therefore, Doerfel teaches away from a system that emits a weapon signal from the weapon toward a target area.

Moreover, Doerfel does not supply the other elements of applicants’ claim 1 that are missing from the teachings of Sampson. More particularly, Doerfel does not teach a weapon signal that defines a first portion of a simulated impact area that is less than the entire simulated impact area. Also, Doerfel does not transmit an impact signal that covers the first portion of the simulated impact area and a second portion which is at least partially outward of the first portion. Therefore, even if combining the teachings of Sampson and Doerfel, applicants’ claim 1 is not obvious over the combined teachings of Sampson and Doerfel.

Claim 3 includes the features of claim 1 described above with respect to a weapon signal defining a first portion of a simulated impact area and an impact signal covering the first portion and a second portion of the simulated impact area which is at least partially outward of the first portion. Therefore, for the reasons set forth above, claim 3 is not obvious over the combination of Sampson and Doerfel.

Claims 10-13 and 17-19 depend directly or indirectly from claim 3, and are, therefore, allowable for the same reasons as well as because of the combination of features set forth in those claims with the features in the claim(s) from which they depend. With particular reference to claim 10, the Examiner cites to column 5, lines 55-58 and states Sampson discloses “a weapon signal emitter spaced from the sensor operable to emit a weapon signal toward the sensor.”

Applicants respectfully submit that claim 10 defines a “weapon” (as opposed to a “weapon signal emitter”), and that the passage cited by the Examiner does not mention any weapon.

Claim 20 is directed to an installation for simulating combat action comprising “at least one obstacle in the line of sight of an entire impact area of a projectile, the obstacle having a periphery[.]” Claim 20 further includes a “device for simulating the effect of exploding projectiles fired by a weapon toward a target area[.]” The device comprises a “sensor” adapted for “sensing a weapon signal from the weapon” and “indicating the simulated firing of a projectile with an explosive effect in the target area[.]” Claim 20 further includes a “transmitter operatively linked to the sensor and operable to emit an impact signal over the impact area[.]” Further, the device being located “at the periphery of the obstacle” is “positioned for allowing simulation of the effect of a weapon fired projectile exploding at the target location near the device.”

The Examiner asserts that Sampson discloses all of the claimed subject matter of claim 20, except for explicitly disclosing that the weapon signal is emitted from a weapon. Applicants respectfully disagree.

The Examiner cites to house 18 to support his position that Sampson discloses applicants’ claim 20 obstacle, and further cites to ceiling 38 to support his position that Sampson discloses applicants’ claim 20 periphery. Applicants respectfully submit that Sampson’s ceiling 38 is not a “periphery” to house 18, as it is located inside (not peripheral to) the house. Unlike a ceiling, which is inside and part of the house, a periphery is not inside and part of applicants’ claim 20 obstacle. Applicants’ claim 20 device is located at the periphery such that when a weapon signal is emitted toward the target area, the sensor can sense the signal. Applicants respectfully disagree with the Examiner’s characterization that the device in Sampson is located at the periphery and positioned for allowing simulation of the effect of a weapon fired projectile exploding at the target location near the device. Instead, the kill zones defined in Sampson always include the area where the device is located. Further, as noted by the Examiner, Sampson does not teach a weapon signal emitted from a weapon. Therefore, elements of applicants’ claim 20 are not taught or suggested by Sampson.

Doerfel does not supply these elements of applicants’ claim 20 that are missing from the teachings of Sampson. Doerfel does not teach or suggest a device located at the periphery of an

obstacle for simulating the effect of exploding projectiles fired by a weapon that comprises a sensor adapted for sensing a weapon signal from the weapon, and indicating the simulated firing of a projectile with an explosive effect in the target area near the device. Therefore, elements of applicants' claim 20 are not taught or suggested by the combination of Sampson and Doerfel, and applicants' claim 20 is not obvious.

Claims 8-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sampson in view of Doerfel, and further in view of Myllyla et al. ("Myllyla," U.S. Patent No. 4,640,514) Applicants respectfully traverse this rejection.

Myllyla is cited for teaching a reflector for reflecting a portion of the weapon signal back to the signal source. The Examiner concludes it would have been obvious to one of ordinary skill to "modify the target area described in the combination of Sampson and Doerfel, by reflecting a portion of the weapon signal back to the weapon, in order to provide feedback that the target has been hit." Applicants respectfully disagree.

Myllyla fails to provide the elements of applicants' claim 3 that are missing from the combined teachings of Sampson and Doerfel. More particularly, Myllyla does not teach or suggest a weapon signal defining first portion of a simulated impact area and an impact signal covering the first portion and a second portion of the simulated impact area which is at least partially outward of the first portion. Even assuming, for the sake of argument that one skilled in the art did combine the references as the Examiner has done, applicants' claim 8 still would not be taught. Further, since the combination of Sampson and Doerfel teaches away from a system that emits a weapon signal from a weapon, one skilled in the art would not be motivated to incorporate features from Myllyla in order to combine the references as the Examiner has done.

Claim 9 depends directly from claim 8 and is, therefore, patentable for the same reasons, as well as because of the combination of features in claim 9 with the features set forth in claim 8.

For the reasons set forth above, claims 1-20 are in condition for allowance.

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